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Rejections

A. 35 U.S.C. §103

The Examiner has rejected claims 1-3 and 9-10 under 35 U.S.C. §103(a) as being unpatentable over the Asamizuya et al. patent (U.S. Patent No. 6,314,576, issued November 6, 2002) in view of the Liu et al. patent (U.S. Patent No. 5,970,233, issued October 19, 1999). In view of the various amendments made to the claims, it is respectfully submitted that the Examiner's rejection is moot.

C. 35 U.S.C. §103

The Examiner has rejected claims 4, 11, 16, 17, 21 and 22 under 35 U.S.C. §103(a) as being unpatentable over the Asamizuya et al. patent and the Liu et al. patent and further in view of the Lee patent (U.S. Patent No. 5,771,335, issued June 23, 1998). In view of the various amendments made to the claims, it is respectfully submitted that the Examiner's rejection is moot.

C. 35 U.S.C. §103

The Examiner has rejected claims 5-8 and 12-14 under 35 U.S.C. §103(a) as being unpatentable over the Asamizuya et al. and Liu et al. patents in view of the McLaren publication (PCT WO 96/13121). In view of the various amendments made to the claims, it is respectfully submitted that the Examiner's rejection is moot.

Allowable Subject Matter

The Applicants thank the Examiner for indicating that claims 18, 19, 23 and 24 contain allowable subject matter and would themselves be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner notes that the prior art of record fails to show or fairly suggest switching from a fast-forward bitstream to the broadcast stream in response to an end-delimiting indicator (regarding claims 18 and 23). The Examiner also notes that the prior art of record fails to show or fairly suggest switching from a fast-forward bitstream to the broadcast stream in response to a user request (regarding claims 19 and 24).

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Various claim amendments have been made to insure that such relevant limitations are included within the various base claims.

Claim 1 has been amended to include the relevant subject matter indicated as being allowable in claim 18. Therefore, it is respectfully submitted that claim 1 is patentable for at least the reasons cited by the Examiner with respect to claim 18. Moreover, since claims 2-8 depend from claim 1 and recite additional limitations therefrom, it is respectfully submitted that these claims are also patentable for at least the reasons relevant to claim 18.

Claim 9, from which claim 18 indirectly depends, has been amended to include the relevant limitations indicated as rendering claim 18 allowable. As such, it is respectfully submitted that claim 9 is therefore allowable. Further, since claims 10-18 depend from claim 9 and recite additional limitations therefrom, it is respectfully submitted that these claims are also allowable.

Claims 19, 23 and 24 have been rewritten in independent form to include the relevant limitations of their respective base claims and intervening claims. As such, it is submitted that claims 19, 23 and 24 are allowable.

Various dependent claims have been amended to confirm the language to the base claims as amended. All of these claims are allowable for at least the reasons associated with their respective base claims.

Newly Added Claims

It is respectfully submitted that newly added claims 25-27 are fully supported by the specification and do not add new subject matter. Moreover, since claim 25 depends from claim 19, and claims 26 and 27 depend from claim 23, it is respectfully submitted that these claims are patentable for at least the reasons discussed above with respect to claims 19 and 23.

Conclusion

The Applicants believe that all of the claims presently in the application are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

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If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall, Esq. at (908) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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MARKED UP SPECIFICATION

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CROSS-REFERENCE TO A RELATED APPLICATION

The disclosure contained in this application is related to U.S. patent application serial number 09/201,529 (attorney docket number 167), filed simultaneously herewith and herein incorporated by reference.

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MARKED UP CLAIMS

1. (amended) Apparatus for providing demand television comprising:
a broadcast encoder for encoding a video frame sequence to form a broadcast bitstream;
a storage encoder for encoding the video frame sequence to form a storage bitstream;
a transmission system for transmitting the broadcast bitstream to subscriber equipment;
a storage device for storing the storage bitstream; and
wherein the storage device stores the storage bitstream at the same time that the transmission system transmits the broadcast bitstream;
wherein said storage bitstream contains a plurality of bitstream types including at least a play bitstream and a fast forward bitstream, and said fast forward bitstream contains an indicator that delimits the end of available data such that a transition from said fast forward bitstream to at least one of said broadcast bitstream and said play bitstream is appropriate.
5. (amended) The apparatus of claim 1 wherein said storage encoder comprises:
a first encoder for producing [a first]said play bitstream that contains information that, when decoded, produces a [standard] forward play video frame sequence;
a frame subsampler;
a buffer that stores subsampled frames of the video sequence;
a second encoder for producing [a second]said fast forward bitstream that contains information that, when decoded, produces a fast forward video frame sequence;
a third encoder for producing a [third]fast reverse bitstream that contains information that, when decoded, produces a fast reverse video frame sequence; and
a controller that selects subsampled frames from the buffer and couples to selected frames to the second and third encoders.
8. (amended) The apparatus of claim 5 wherein the controller multiplexes selection of the frames from the buffer to apply a plurality of subsampled frames to said second encoder to form said [second]fast forward bitstream and then apply a plurality of subsampled frames to said third encoder to form said [third]fast reverse bitstream.

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9. (amended) A method for providing demand television comprising the steps of:
encoding, in real-time, a broadcast video frame sequence to form a broadcast
bitstream, while at the same time encoding the broadcast video frame sequence to form
a storage bitstream;
broadcasting the broadcast bitstream to subscriber equipment;
storing the storage bitstream within a storage device;
upon a subscriber selecting to view information previously broadcast by the
broadcast bitstream, transmitting to the subscriber the storage bitstream;
wherein said storage bitstream contains a plurality of bitstream types including at
least a play bitstream and a fast forward bitstream, and said fast forward bitstream
contains an indicator that delimits the end of available data such that a transition from
said fast forward bitstream to at least one of said broadcast bitstream and said play
bitstream is appropriate.
12. (amended) The method of claim 9 wherein said storage bitstream encoding
step comprises the steps of:
encoding said frames to form [a first]said play bitstream;
subsampling said broadcast video frames;
buffering said subsampled frames;
recalling said buffered frames in a forward time sequence order;
encoding said recalled buffered frames to form [a second]said fast forward
bitstream;
recalling said buffered frames in a reverse time sequence order;
encoding said recalled buffered frames to form a [third]fast reverse bitstream.
13. (amended) The method of claim 12 wherein said [first]play bitstream when
decoded forms a standard play frame sequence.
14. (amended) The method of claim 12 wherein said [second]fast forward
bitstream, when decoded, forms a fast forward frame sequence.
15. (amended) The method of claim 12 wherein said [third]fast reverse bitstream,
when decoded, forms a fast reverse frame sequence.

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17. (amended) The method of claim 16 wherein said storage bitstream types include [a play bitstream, a fast forward bitstream and] a fast reverse bitstream.

18. (amended) The method of claim 17 wherein [said fast forward bitstream contains an indicator that delimits the end of available data and] the method further comprises a step of switching from transmitting a fast forward bitstream to transmitting said broadcast bitstream upon reaching the indicator.

19. (amended) [The method of claim 9 further comprising the step of:] A method for providing demand television comprising the steps of:

encoding, in real-time, a broadcast video frame sequence to form a broadcast bitstream, while at the same time encoding the broadcast video frame sequence to form a storage bitstream;

broadcasting the broadcast bitstream to subscriber equipment;

storing the storage bitstream within a storage device;

upon a subscriber selecting to view information previously broadcast by the broadcast bitstream, transmitting to the subscriber the storage bitstream; and

upon a request from a subscriber, switching from decoding said storage bitstream to decoding said broadcast bitstream.

23. (amended) [The method of claim 22 further comprising the step of:] A method of providing demand television comprising the steps of:

transmitting a broadcast bitstream to a plurality of subscriber equipment for decoding;

storing said broadcast bitstream as a storage bitstream while said broadcast bitstream is being transmitted;

upon said subscriber equipment requesting said storage bitstream to enable review of information contained in said broadcast bitstream, transmitting said storage bitstream to said subscriber having requested the storage bitstream;

wherein said storage bitstream comprises at least a play bitstream and a fast forward bitstream, and upon said fast forward bitstream being exhausted of data, automatically switching from said storage bitstream to said broadcast bitstream.

24. (amended) [The method of claim 20 further comprising the step of:] A method of providing demand television comprising the steps of:

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transmitting a broadcast bitstream to a plurality of subscriber equipment for decoding;

storing said broadcast bitstream as a storage bitstream while said broadcast bitstream is being transmitted;

upon said subscriber equipment requesting said storage bitstream to enable review of information contained in said broadcast bitstream, transmitting said storage bitstream to said subscriber having requested the storage bitstream; and

upon said subscriber equipment requesting said broadcast bitstream, switching from said storage bitstream to said broadcast bitstream.

25. (newly added) The method of claim 19, wherein said storage bitstream comprises at least a play bitstream and a fast forward bitstream, and upon said fast forward bitstream being exhausted of data, automatically switching from said storage bitstream to said broadcast bitstream.

26. (newly added) The method of claim 23 wherein said storage bitstream comprises a fast reverse bitstream.

27. (newly added) The method of claim 23, wherein upon said subscriber equipment requesting said broadcast bitstream, switching from said storage bitstream to said broadcast bitstream.